

Atty. Docket No. 2001-0111-01
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Remarks

In the Office Action, the Examiner has imposed a restriction requirement between Group I drawn to a device and method for reducing vibration (claims 1-15 and 18) and Group II drawn to a method of constructing a device for reducing vibration (claims 16 and 17). During a telephone conversation between the Examiner and Mr. William Cray on April 13, 2005, a provisional election was made without traverse to prosecute the invention of Group I (claims 1-15 and 18), and that election is hereby confirmed. Accordingly, claims 16 and 17 are hereby cancelled without prejudice or disclaimer of subject matter.

Additionally, claims 4, 5 and 10 have been rejected under 35 U.S.C. § 112, first paragraph, as failing to comply with the enablement requirement and claims 13 and 14 have been rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which Applicants regard as the invention. In this response, claims 4, 5, 10, 13 and 14 are hereby cancelled without prejudice or disclaimer of subject matter.

Also in the Office Action, claims 1-6, 9-10, 12 and 18 have been rejected under 35 U.S.C. § 102(e) as being anticipated by Fuller et al. and claims 7, 8, 11 and 13-15 have been rejected under 35 U.S.C. § 103(a) as being obvious in view of various references and reference combinations.

In this response to the Office Action, independent claim 1 has been amended to now include all of the limitations of the dependent claim 2 and dependent claim 2 has been canceled. Also in this response, independent claim 18 has been amended to now include the step of bonding an actuator having active damping means, passive damping means, and a constraining means in contact with the passive damping means, to a desired portion of a section of material. Support for this amendment is found in the specification on page 8 [paragraph 0036], in Fig. 2 and in the original claims. Additionally, claim 8 has been amended to now depend from claim 7 to provide antecedent basis for the term "viscoelastic material" in claim 8.

Claims 1, 3, 6-9, 11, 12, 15 and 18 remain pending.

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Rejections under 35 U.S.C. § 102(e)

In the Office Action, claims 1-6, 9-10, 12 and 18 have been rejected under 35 U.S.C. § 102(e) as being anticipated by Fuller et al.

In this response to the Office Action, independent claim 1 has been amended to now recite, *inter alia*, a device for reducing vibration in a section of material comprising an active damper located at a first distance from the material, a passive damper located at a second distance from the material, wherein the second distance is greater than the first distance, and a constraining layer in contact with the passive damper. In a similar manner, independent claim 18, as amended, now recites the step of bonding an actuator having active damping means, passive damping means and a constraining means in contact with the passive damping means to a desired portion of a section of material. No such structure or cooperation of structure is disclosed by the cited reference (i.e., Fuller et al.). In particular, Fuller et al. fail to teach or suggest a constraining layer in contact with the passive damper.

Instead, and quite unlike the present invention, the scheme suggested by Fuller et al. includes an active layer such as PVDF in combination with a mass layer such as a thin sheet of lead. Fuller further suggests that "the mass layer may include varying masses within the mass layer" (Col. 4 lines 46-48). Applicants respectfully contend that this statement in no way teaches or suggests a constraining layer in contact with a passive damper, as those terms are known to one skilled in the pertinent art. Nor does the statement "the mass layer may include varying masses within the mass layer" imply, as the Examiner has suggested, that the mass layer may necessarily include different types of materials (i.e., a constraining material and a passive damping material).

The Fuller reference also indicates that "other appropriate thin sheet material, such as, steel, aluminum, composite fiberglass material and the like may be used when practicing the invention" (Col. 4 lines 48-51). Again, Applicants respectfully contend that this statement in no way teaches or suggests a constraining layer in contact with a passive damper. A plausible interpretation of this statement is simply that thin sheets of other materials (i.e., steel, aluminum, etc) can be used in place of a thin sheet of lead (i.e., the preferred material) in a particular mass layer.

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Because Fuller et al. fails to teach or suggest a constraining layer in contact with a passive damper as recited in amended claim 1 or a constraining means in contact with the passive damping means as recited in amended claim 18, Applicants respectfully contend that independent claims 1 and 18 are not anticipated by Fuller et al. Further, since claims 3, 6, 9-10 and 12 depend either directly or indirectly from independent claim 1, they are likewise allowable. For the reasons set forth above, Applicants believe that the basis for rejecting claims under 35 U.S.C. § 102(e) has been overcome and the rejections should be withdrawn.

Rejections under 35 U.S.C. § 103(a)

In the Office Action, claims 7 and 15 have been rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6700304 to Fuller in view of U.S. Patent No. 5261200 to Sasaki et al., and claim 8 has been rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6700304 to Fuller in view of U.S. Patent No. 5261200 to Sasaki as applied to claim 7 above, and further in view of U.S. 6501644 to Silverman et al.. In addition, claim 11 has been rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6700304 to Fuller in view of U.S. Patent Application Publication No. 20020092699 to Worrell et al., and claims 13 and 14 have been rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6700304 to Fuller. Applying the arguments provided above regarding independent claims 1 and 18, Applicants respectfully contend that independent claim 15 is non-obvious over the cited references for these same reasons.

In particular, independent claim 15 recites, *inter alia*, a piezoelectric element, a viscoelastic portion and a constraining layer having a higher stiffness than the viscoelastic portion. None of the cited references, taken alone or in combination, teach or suggest this structural combination. Specifically, as indicated above, Fuller et al. fails to teach a constraining layer in contact with a passive damper (e.g., viscoelastic portion). Moreover, the teaching that is lacking in Fuller et al. is not provided by any of the other cited references. In more detail, the Examiner has suggested that the references provide motivation to substitute a viscoelastic material as disclosed in Sasaki in place of a portion of a metal (or fiberglass) tuned mass layer as disclosed by Fuller et al. to arrive at a


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device having a viscoelastic portion and constraining layer with a higher stiffness than the viscoelastic portion. Applicants respectfully disagree. Such a motivation is simply not found in Sasaki, Fuller et al. or any of the other cited references.

In view of the arguments presented above for distinguishing independent claim 15 of the present invention from the cited references, Attorney for Applicants respectfully contends that independent claim 15 is now allowable. For the reasons set forth above, Applicant believes the basis for rejecting claims under 35 U.S.C. § 103(a) has been overcome and the rejections should be withdrawn.

In conclusion, Applicants respectfully assert that claims 1, 3, 6-9, 11, 12, 15 and 18 are patentable for the reasons set forth above, and that the application is now in a condition for allowance. Accordingly, an early notice of allowance is respectfully requested. The Examiner is requested to call the undersigned at (858) 385-5298 for any reason that would advance the instant application to issue.

Respectfully submitted,



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